



Lawrence Livermore National Laboratory

HEALTH & ECOLOGICAL
ASSESSMENT DIVISION



May 22, 1998

Senator Helkena Anni
Mejit Island
P.O. Box 605
Majuro, Republic of the Marshall Islands, 96960

Dear Senator Anni:

I am enclosing a reprint of a paper I recently published that includes our current estimate of the average effective radiation dose received by people living at Mejit Island as of January 1, 1996.

The estimated effective dose for Mejit Island is less than 0.04 mSv per year for people currently residing on Mejit. This is a very low dose.

The estimated average background dose in the Marshall Islands is about 2.4 mSv per year (see Table 8 on page 46 of the enclosed reprint). The combined dose from background sources and man-made (bomb related) radionuclides is $2.4 + 0.04 = 2.44$ mSv per year. For comparison the average background dose in the United States is 3.0 mSv per year and in Europe 2.4 mSv per year. Consequently, the total dose (and therefore risk) to Mejit residents today is no different than the radiation dose/risk received by everybody else in the world.

The above stated dose estimates are based on samples collected in 1978 as part of the Northern Marshall Islands Radiological Survey. The number of samples collected were:

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Sample Type	Number	Composite Samples
Coconut	28	5
Breadfruit	13	3
Pandanus	7	3
Papaya	2	1
Tuca	5	1
Pigs	2	2
Chickens	2	1

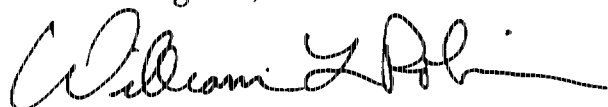
As an example, 28 coconuts were collected but 5 or 6 from each tree are required for a sample. Therefore, there were 5 composite samples (i.e., coconut trees sampled).

The dose estimate for current residence at Mejit was made by decay correcting the ^{137}Cs from 1978 to 1996 using the radiological half-life of 30.1 y for ^{137}Cs . We do know that ^{137}Cs also is removed from the soil and transported to the groundwater where it is no longer available for uptake into food crops. We are currently working very hard to determine the rate of this loss process. We do know that the dose will be less than the 0.04 mSv year estimated by radiological decay only.

In summary, the estimated effective dose for current residence on Mejit Island is less than 0.04 mSv per year. Consequently, the risk from the radiation dose on Mejit (background plus man-made) is no different than elsewhere in the world.

If you have further questions, I will be happy to discuss them with you.

Best regards,



William L. Robison
Scientific Director
Marshall Islands Program

WLR:jg

Enclosure